



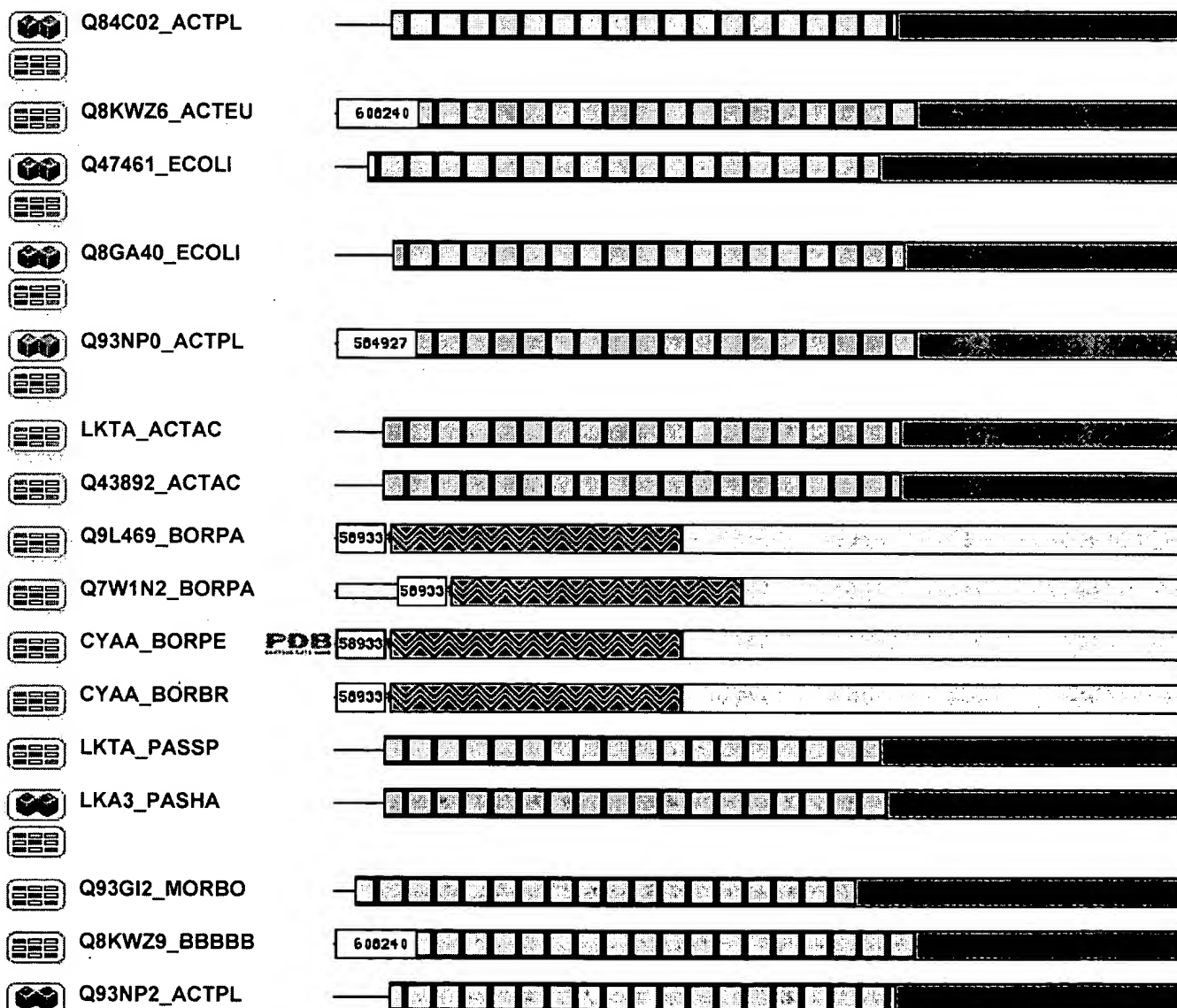
Release2005.1

Proteins sharing a prodom "Domain" with Q93GI2_MORBO (Q93GI2)



Complete output

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Am. J. Vet. Res., 50:1437-1441.

Other Reference Publication (18):

Riley, Growth Requirements for Moraxella Bovis, Veterinary Microbiology, 9 (1984) 593-598.

Other Reference Publication (19):

Ostle et al., Outer Membrane Protein Antigens of Moraxella Bovis, Am. J. Vet. Res., vol. 47, No. 7, Jul., 1986.

CLAIMS:

1. A method of producing a M bovis cell culture comprising the steps of inoculating a colony of M bovis in a growth medium and causing said colony to grow therein and express outer membrane proteins, said medium having a low available iron content resulting in at least about 0.01% by weight of the total expressed outer membrane protein content having a molecular weight of about 104 kDa, as determined by sodium dodecyl sulfate polyacrylamide gel electrophoresis and quantified by soft laser densitometry.
5. A mixture of isolated outer membrane proteins derived from M bovis, said mixture including an outer membrane protein having a molecular weight of about 104 kDa, as determined by sodium dodecyl sulfate polyacrylamide gel electrophoresis.
9. An isolated outer membrane protein derived from M. bovis and having a molecular weight of about 104 kDa.

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DATE: Thursday, April 06, 2006

Hide?	<u>Set Name</u>	<u>Query</u>	<u>Hit Count</u>
		<i>DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=OR</i>	
<input type="checkbox"/>	L1	epp and bovis	17
<input type="checkbox"/>	L2	39218 and bovis	1

END OF SEARCH HISTORY

WEST Search History

DATE: Thursday, April 06, 2006

Hide?	<u>Set</u> <u>Name</u>	<u>Query</u>	<u>Hit</u> <u>Count</u>
	<i>DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=OR</i>		
<input type="checkbox"/>	L1	leukotox\$ or leucotox\$ or leuco-tox\$ or leuko-tox\$	337
<input type="checkbox"/>	L2	fusion or fused or chimera or chimeric or heterologous or heter-ologous or foreign or subsequence or sub-sequence or single-chain or singlechain or pt7-7 or pt7 or pproexhta or ppro or exhta	1563431
<input type="checkbox"/>	L3	hishishis or hishishishis or hishishishishis or hishishishishishis or 6his or 6-his or 6xhis or 6x-his or polyhistidine or poly-his or 6histidine or poly6his or poly-6his or nickel or chélate or metal	4592792
<input type="checkbox"/>	L4	L3 and l2 and l1	106
<input type="checkbox"/>	L5	L3.clm. and l2.clm. and l1.clm.	0
<input type="checkbox"/>	L6	L3.clm. and l1.clm.	0
<input type="checkbox"/>	L7	L3.clm. and l2.clm.	10305
<input type="checkbox"/>	L8	L7 and l1	1
<input type="checkbox"/>	L9	l1.clm.	51
<input type="checkbox"/>	L10	L9 and l3	9
<input type="checkbox"/>	L11	l1 near100 (epitope or fragment or segment or portion or subunit or sub-unit or truncate or truncated)	77
<input type="checkbox"/>	L12	L11 near100 (l3 or poly-hisitide or ninta or ni-nta)	3
<input type="checkbox"/>	L13	L11 and (l3 or poly-hisitide or ninta or ni-nta)	16
<input type="checkbox"/>	L14	L13 not l12	13
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<input type="checkbox"/>	L16	('5594107' '6797272' '5837268' '6096320')!.ABPN1,NRPN,PN,TBAN,WKU.	8

END OF SEARCH HISTORY

Search Results - Record(s) 1 through 8 of 8 returned.

L16: Entry 1 of 8

File: USPT

Sep 28, 2004

US-PAT-NO: 6797272

DOCUMENT-IDENTIFIER: US 6797272 B1

TITLE: Enhanced immunogenicity using leukotoxin chimeras

DATE-ISSUED: September 28, 2004

US-CL-ISSUED: 424/192.1; 424/255.1, 424/185.1, 424/193.1, 424/195.11, 424/236.1, 424/241.1, 530/350, 530/351

US-CL-CURRENT: 424/192.1; 424/185.1, 424/193.1, 424/195.11, 424/236.1, 424/241.1, 424/255.1, 530/350, 530/351INT-CL-ISSUED: [07] A61 K 39/00

L16: Entry 2 of 8

File: USPT

Aug 1, 2000

US-PAT-NO: 6096320

DOCUMENT-IDENTIFIER: US 6096320 A

TITLE: Vaccines with chimeric protein comprising gamma-interferon and leukotoxin derived from pasteurella haemolytica

DATE-ISSUED: August 1, 2000

US-CL-ISSUED: 424/255.1; 424/192.1, 424/193.1, 424/195.11, 424/85.1, 424/85.4, 424/85.5, 435/69.5, 435/69.7, 530/350, 530/351

US-CL-CURRENT: 424/255.1; 424/192.1, 424/193.1, 424/195.11, 424/85.1, 424/85.4, 424/85.5, 435/69.5, 435/69.7, 530/350, 530/351INT-CL-ISSUED: [07] A61 K 39/102

L16: Entry 3 of 8

File: USPT

Nov 17, 1998

US-PAT-NO: 5837268

DOCUMENT-IDENTIFIER: US 5837268 A

TITLE: GnRH-leukotoxin chimeras

DATE-ISSUED: November 17, 1998

US-CL-ISSUED: 424/255.1; 424/184.1, 424/200.1, 424/198.1, 424/193.1, 424/192.1, 530/300, 530/350, 514/2, 514/7, 514/12, 514/15, 935/11, 935/12, 935/13

US-CL-CURRENT: 424/255.1; 424/184.1, 424/192.1, 424/193.1, 424/198.1, 424/200.1, 514/12, 514/15, 514/2, 514/7, 530/300, 530/350INT-CL-ISSUED: [06] A61 K 38/00, A61 K 39/02, C12 N 15/00, C07 K 2/00

L16: Entry 4 of 8

File: USPT

Jan 14, 1997

US-PAT-NO: 5594107

DOCUMENT-IDENTIFIER: US 5594107 A

**** See image for Certificate of Correction ****

TITLE: Chimeric protein comprising an RTX-family cytotoxin and interferon-2 or interferon

DATE-ISSUED: January 14, 1997

US-CL-ISSUED: 530/350; 435/69.5, 435/69.7, 530/351, 530/825, 424/192.1, 424/195.11, 424/197.11, 424/85.1

US-CL-CURRENT: 530/350; 424/192.1, 424/195.11, 424/197.11, 424/85.1, 435/69.5, 435/69.7, 530/351, 530/825INT-CL-ISSUED: [06] C12 N 15/19, A61 K 39/102

L16: Entry 5 of 8

File: DWPI

Aug 1, 2000

DERWENT-ACC-NO: 2000-531543

ABSTRACTED-PUB-NO: US 6096320A

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TITLE: Vaccine for stimulating immunity against pneumonia comprises chimeric protein comprising gamma-interferon and leukotoxin derived from Pasteurella haemolytica

INT-CL (IPC): A61 K 39/102

Derwent-CL (DC): B04, C06, D16

CPI Codes: B04-H03F; B04-H05C; B04-N04; B14-S11; C04-H03F; C04-H05C; C04-N04; C14-S11; D05-H07; D05-H17C;

L16: Entry 6 of 8

File: DWPI

Mar 1, 2006

DERWENT-ACC-NO: 1998-159540

ABSTRACTED-PUB-NO: US 5837268A

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TITLE: Chimeric protein of leukotoxin and gonadotropin releasing hormone - useful for, e.g. preparation of vaccines for reduction of incidence of mammary tumours in mammals, US 6521746 B1

INT-CL (IPC): A61 K 38/00, A61 K 38/09, A61 K 39/00, A61 K 39/02, A61 K 39/385, A61 K 39/39, A61 P 15/18, A61 P 35/00, C07 H 2/02, C07 H 2/04, C07 H 21/02, C07 H 21/04, C07 K 2/00, C07 K 7/23, C07 K 14/285, C07 K 14/575, C07 K 19/00, C12 N 0/00, C12 N 1/21, C12 N 15/00, C12 N 15/09, C12 N 15/16, C12 N 15/31, C12 N 15/62, C12 P 21/02, C12 P 21/04, C12 P 21/06, C12 N 1/21, C12 P 21/02, C12 R 1:19, C12 R 1:19

Derwent-CL (DC): B04, D16

CPI Codes: B04-G01; B04-J07; B14-H01B; B14-S11C; D05-H07; D05-H12C; D05-H12E; D05-H17C;

L16: Entry 7 of 8

File: DWPI

Jan 14, 1997

DERWENT-ACC-NO: 1997-099529

ABSTRACTED-PUB-NO: US 5594107A

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TITLE: Immunogenic chimeric proteins comprising cytokine linked to RTX toxin -
useful in vaccines, esp. against shipping fever in cattle

INT-CL (IPC): A61 K 39/102, C12 N 15/19

Derwent-CL (DC): B04, C06, D16

CPI Codes: B04-C01G; C04-C01G; B04-N02A; C04-N02A; B04-N03A; C04-N03A; B14-S11A;
C14-S11A; D05-H07; D05-H17C; D05-H17C1;

L16: Entry 8 of 8

File: DWPI

Sep 28, 2004

DERWENT-ACC-NO: 1993-152482

ABSTRACTED-PUB-NO: US 5422110A

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TITLE: Immunological carrier system with enhanced immunogenicity - comprises
chimeric protein comprising leuco:toxin peptide or homologous protein fused to
antigen esp. somatostatin or gonadotropin releasing hormone

INT-CL (IPC): A61 K 39/00, A61 K 39/02, A61 K 39/102, A61 K 39/15, C07 H 2/02,
C07 H 2/04, C07 K 13/00, C12 N 15/31, C12 N 15/62, C12 P 21/06

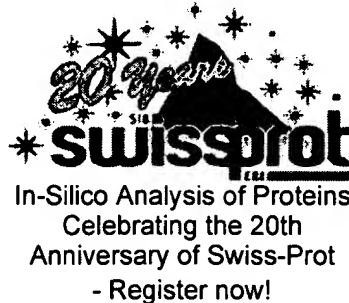
Derwent-CL (DC): B04, D16

CPI Codes: B02-V02; B04-B02B4; B04-B02D4; B04-B04A1; B04-B04A5; B04-C01; D05-C12;
D05-H03B; D05-H07; D05-H10; D05-H12;

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[\[Entry info\]](#) [\[Name and origin\]](#) [\[References\]](#) [\[Comments\]](#) [\[Cross-references\]](#)
[\[Keywords\]](#) [\[Features\]](#) [\[Sequence\]](#) [\[Tools\]](#)

Note: most headings are clickable, even if they don't appear as links. They link to the user manual or other documents.

Entry information

Entry name	HLYA_AERHY
Primary accession number	Q44066
Secondary accession numbers	None
Integrated into Swiss-Prot on	June 1, 2001
Sequence was last modified on	November 1, 1996 (Sequence version 1)
Annotations were last modified on	February 7, 2006 (Entry version 30)

Name and origin of the protein

Protein name	Putative alpha-hemolysin
Synonyms	None
Gene name	Name: hlyA
From	Aeromonas hydrophila [TaxID: 644]
Taxonomy	Bacteria; Proteobacteria; Gammaproteobacteria; Aeromonadales; Aeromonadaceae; Aeromonas.

References

[1] NUCLEOTIDE SEQUENCE [GENOMIC DNA].

STRAIN=Ah20;

Chen J.D., Lai S.Y., Chen C.H.;

"Cloning, expression and sequencing of Aeromonas hydrophila alpha-hemolysin gene determinant.";

Submitted (OCT-1995) to the EMBL/GenBank/DDBJ databases.

Comments

- **FUNCTION:** Lyses fish blood cells (*Potential*).
- **SIMILARITY:** Belongs to the UPF0161 family [view classification].

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Cross-references

Sequence databasesEMBL L36462; AAB81225.1; -;
Genomic_DNA.[EMBL / GenBank / DDBJ]
[CoDingSequence]**3D structure databases**

ModBase Q44066.

Protein-protein interaction databases

DIP Q44066.

2D gel databases

SWISS-2DPAGE Get region on 2D PAGE.

Organism-specific gene databases

HOGENOM [Family / Alignment / Tree]

Family and domain databasesHAMAP MF_00386; -, 1.
PBIL [Family / Alignment / Tree]InterPro IPR002696; DUF37.
Graphical view of domain structure.Pfam PF01809; DUF37; 1.
Pfam graphical view of domain structure.ProDom PD004225; DUF37; 1.
[Domain structure / List of seq. sharing at least 1 domain]

TIGRFAMs TIGR00278; DUF37; 1.

BLOCKS Q44066.

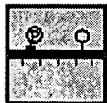
Other

ProtoNet Q44066.

UniRef View cluster of proteins with at least 50% / 90% / 100% identity.

Keywords

Cytolysis; Hemolysis; Toxin.

Features

Feature table viewer

Key	From	To	Length	Description	FTId
CHAIN	1	85	85	Putative alpha-hemolysin.	PRO_0000171785

Sequence informationLength: **85 AA** [This is the length of the unprocessed precursor]Molecular weight: **9345 Da** [This is the MW of the unprocessed precursor]CRC64: **1FCEDA95833350C5**
is a checksum on the sequence

10	20	30	40	50	60
MASALSPGSR	VLIALIRVYQ	RLISPLLGP	CRFTPTCSSY	GIEALRRFGV	IKGSWLTVKR
70	80				
VLKCHPLHPG	GDDPVPPGPF	DTREH			

Q
in
F/

foi

View entry in original UniProtKB/Swiss-Prot format

View entry in raw text format (no links)

Report form for errors/updates in this UniProtKB/Swiss-Prot entry

BLAST

BLAST submission on
ExPASy/SIB
or at NCBI (USA)



Sequence analysis tools: ProtParam,
ProtScale, Compute pI/Mw, PeptideMass,
PeptideCutter, Dotlet (Java)



ScanProsite, MotifScan



Submit a homology modeling request to
SWISS-MODEL

NPS@

NPSA Sequence
analysis tools



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Blast 2 Sequences results

PubMed

Entrez

BLAST

OMIM

Taxonomy

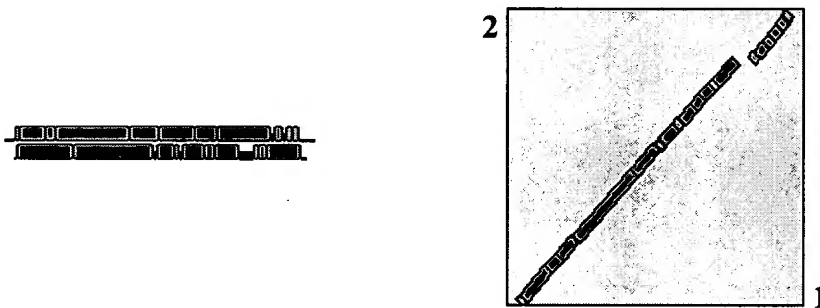
Structure

BLAST 2 SEQUENCES RESULTS VERSION BLASTP 2.2.13 [Nov-27-2005]

Matrix **BLOSUM62** gap open: **11** gap extension: **1**
 x_dropoff: **50** expect: **300.00** wordsize: **3** Filter ☐ View option **Standard**
 Masking character option **X for protein, n for nucleotide** Masking color option **Black**
☐ Show CDS translation **Align**

Sequence 1: gi|470685|gb|AAA21924.1|RTX toxin
 Length = 1049 (1 .. 1049)

Sequence 2: gi|15146408|gb|AAK84651.1|AF205359_1 RTX toxin [Moraxella bovis]
 Length = 927 (1 .. 927)



NOTE: Bitscore and expect value are calculated based on the size of the nr database.



Score = 714 bits (1843), Expect = 0.0
 Identities = 425/970 (43%), Positives = 571/970 (58%), Gaps = 97/970 (10%)

Query	45	LAAGKAVQKYGNK-LVLVIPKEYDGSVGN GFFDLVKAAEELGIQVKYVNRNELEVAHKSL	103
		+ AG K G K L L IPK+YD G D +KAA+ELGI N E A.KS+	
Sbjct	11	IQAGLNSTKSGLKNLYLAIPKDYDPQGGT LNDFIKAADELGIARLAEEPNHTETAKKSV	70
Query	104	GTADQFLGLTERGLTLFAPQLDQFLQKHSKISNVVGSSTGDAVS-KLAKSQTIISGIQSV	162
		T +QFL LT+ G+ + A +L++FLQKHS G + + + KL K+ ++S + S	
Sbjct	71	DTVNQFLSLTQTGIAISATKLEKFLQKHSTNKLAKGLDSVENIDRKLKASNVLSTLSSF	130
Query	163	LGTVLAGINLNEAIISGGSELE-LAEAGVSLASELVSNIAGTTTIDAFTTQIQNFGKLA	221
		LGT LAGI L+ I G + + LA+A + L +E++ N+++ T TI+AF++Q+ G	
Sbjct	131	LGTALAGIELDSLIIKKGDAAPDALAKASIDLINEIIGNLSQSTQTIEAFSSQLAKLGSTI	190
Query	222	ENAKGLGGVGRQLQNISGSALSKTGLGLDISSLLSGVTRSFALRNKNASTSTKVAAGFE	281
		AKG +G +LQN++ SKT LGL+II+ LLSG++ FAL +KNAST KVAAGFE	
Sbjct	191	SQAKGFSNIGNKLQNLN---FSKTNLGLEIITGLLSGISAGFALADKNASTGKKVAAGFE	247

Query	282	LSNQVIGGITKAVSSYILAQRRLAGLSTTGPAALIASSISLAISPLAFLRVADNFNRSK	341
		LSNQVIG +TKA+SSY+LAQR+ AGLSTTG AALI SSI LAISPLAF+ AD FN +	
Sbjct	248	LSNQVIGNVTKAISYVLAQRVAAGLSTTGAVAALITSSIMLAISPLAFMNAADKFNHAN	307
Query	342	EIGEFAERFKKLGYDGDKLLSEFYHEAGTIDASITTISTALSAIAAGTAAASAGALVGAP	401
		+ EFA++F+K GYDGD LL+E+ GTI+AS+TTISTAL A++AG +AA+ G+ VGAP	
Sbjct	308	ALDEFAKQFRKFGYDGDHLLAEYQRGVGTIEASLTITISTALGAVSAGVSAAAVGSAGVAP	367
Query	402	ITLLVTGITGLISGILEFSKQPMLDHVASKIGNKIDEWKKY-GKNYFENGYDARHKAFL	460
		I LLV G+TGLISGILE SKQ M + VA+++ KI EWK+ G+NYF+ GYD+R+ A+L	
Sbjct	368	IALLVAGVTGLISGILEASKQAMFESVANRLQGKILEWQKNGGQNYFDKGYDSRYAAYL	427
Query	461	EDSFSLLSSFNKQYETERAVLITQQRWDEYIGELAGITGKGDKLSSGKAYVDYFQEGKLL	520
		++ LS NK+ E ER + ITQQRWD IGELAGIT G+++ SGKAY D F++GK +	
Sbjct	428	ANNLKFLELSELNKELEAERVIAITQQRWDNNIGELAGITKLGERIKSGKAYADAFEDGKKV	487
Query	521	EKKPDDFSKVVFDPTKGEIDISNS--QTSTLLKFVTPLLTPGTESRERTQTGKYEYITKL	578
		E S + D G IDISNS + + L F +PLLT GTESRER GKY YI KL	
Sbjct	488	EAG----SNITLDAKTGIIDISNSNGKKTQALHFTSPLLTAGTESRERLTNGKYSYINKL	543
Query	579	VVKGKDKWVVNGVKDKGAVYDYTNLIQHAHISSSVARGEYREVRLVSHLGNNGNDKVFLA	638
		W V + + D++ +IQ VA E E+ L+ + GND +F+	
Sbjct	544	KFGRVKNWQVTD-GEASSKLDFSKVIQR-----VAETEGTDEIGLIVNAKAGNDDIFVG	596
Query	639	AGSAEIHAGEGHDVYYDKT-DTGLLVIDGKATEQGRYSVTRELSGATKILREVIKNQK	697
		G I G+GHD V+Y K G + +DGT ATE G Y+V R+++ I EV+K Q+	
Sbjct	597	QGKMNIIDGGDGHDRVFYSKDGFGNITVDGTSATEAGSYTVNRKVARG-DIYHEVVKRQE	655
Query	698	YAVGKREETLEYRDYELTQSGNSNLKAHDELHSVEE-IGSNQRDEFKGSKFRDIFHGADG	756
		VGKR ET++YRDYEL + G ++ D L SVEE IGS D FKGSKF DIFH +G	
Sbjct	656	TKVGKRTETIQYRDYELRKVG-YGYQSTDNLKSVEEVIGSQFNDVFKGSKFNDIFHSSEG	714
Query	757	DDLLNGNDGDDILYGDKGNDLGRDNGNDQLYGGEEDDKLLGGNGNNYLSGGDGNDELQV	816
		DDLL+G GDD L+G KGND L GD G+D L GG GDD L GG GN	
Sbjct	715	DDLLDGGAGDDRLFGGKGNDRLSGDEGDDLLDGGSGDDVLNGGAGN-----	760
Query	817	LGNGFNVLRGKGDDKLYGSSGSDLLDGGEGNDYLEGGDGSDFYVYRSTSGNHTIYDQ GK	876
		D Y++R GN T+YD	
Sbjct	761	-----DVYIFRKG DGNDTLYD---	776
Query	877	ASDSKLYLSDLSDNVLKRVNDNLEFRSNNNSNSGVLTIKDWFKGGNSYN-----H	929
		+ +DKL +D + +I+++R + + + N +SG + I W+ N N H	
Sbjct	777	GTGNDKLAFAFADANISDIMIERTKEGIIVK--RNDHSGSINIPRWYITSNLQNYQSNKTDH	834
Query	930	KIEQIVDKNGRKLTAGNLGNNFHD----TQQASSLLKNVTQEQNESNLSS--LKTELGKI	983
		KIEQ++ K+G +T+ + D T S LK + E LS+ + + L K+	
Sbjct	835	KIEQLIGKDGSIYITSDQIDKILQDKDGTVITSQELKKLADENKSQKLSASDIASSLNKL	894
Query	984	ITNAGNFGVA 993	
		+ + FG A	
Sbjct	895	VGSMALFGTA 904	

CPU time: 0.07 user secs. 0.01 sys. secs 0.08 total secs.

Lambda K H
0.311 0.131 0.361

Gapped

Lambda	K	H
0.267	0.0410	0.140

Matrix: BLOSUM62

Gap Penalties: Existence: 11, Extension: 1

Number of Sequences: 1

Number of Hits to DB: 9204

Number of extensions: 5598

Number of successful extensions: 52

Number of sequences better than 300.0: 1

Number of HSP's gapped: 1

Number of HSP's successfully gapped: 1

Length of query: 1049

Length of database: 1,215,510,009

Length adjustment: 144

Effective length of query: 905

Effective length of database: 1,215,509,865

Effective search space: 1100036427825

Effective search space used: 1100036427825

Neighboring words threshold: 9



X1: 16 (7.2 bits)

X2: 129 (49.7 bits)

X3: 129 (49.7 bits)

S1: 42 (21.8 bits)

S2: 71 (32.0 bits)



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Display Show Send to

Range: from to Features: ☐ SNP ☒ CDD ☒ MGC ☒ HPRD ☒ STS ☒ tRNA

☐ 1: [BAA04014](#). Reports RTX toxin I type ...[gi:497787]

[BLink](#), [Conserved Domains](#), [Links](#)

Comment Features Sequence

LOCUS BAA04014 1023 aa linear BCT 04-FEB-1999
DEFINITION RTX toxin I type L [Actinobacillus pleuropneumoniae].
ACCESSION BAA04014
VERSION BAA04014.1 GI:497787
DBSOURCE locus ACNAPXIA accession [D16582.1](#)
KEYWORDS .
SOURCE Actinobacillus pleuropneumoniae
ORGANISM [Actinobacillus pleuropneumoniae](#)
Bacteria; Proteobacteria; Gammaproteobacteria; Pasteurellales;
Pasteurellaceae; Actinobacillus.
REFERENCE 1 (sites)
AUTHORS Frey,J., Meier,R., Gygi,D. and Nicolet,J.
TITLE Nucleotide sequence of the hemolysin I gene from Actinobacillus
pleuropneumoniae
JOURNAL Infect. Immun. 59 (9), 3026-3032 (1991)
PUBMED [1879928](#)
REFERENCE 2 (residues 1 to 1023)
AUTHORS Nagai,S., Yagihashi,T. and Ishihama,A.
TITLE DNA sequence analysis of an allelic variant of the Actinobacillus
pleuropneumoniae-RTX-toxin I (ApxIA) from serotype 10
JOURNAL Microb. Pathog. 15 (6), 485-495 (1993)
PUBMED [8007819](#)
REFERENCE 3 (residues 1 to 1023)
AUTHORS Nagai,S.
TITLE Direct Submission
JOURNAL Submitted (02-JUL-1993) Shinya Nagai, Nippon Institute of
Biological Science; 2221-1, Shinmachi, Oume, Tokyo 198, Japan
(E-mail:nfujita, Tel:0428-33-1037, Fax:0428-31-6166)
COMMENT Submitted (02-Jul-1993) to DDBJ by:
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Nippon Institute of
Biological Science
2221-1 Shinmachi
Oume, Tokyo 198
Japan
Phone: 0428-33-1037
Fax: 0428-31-616.
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Mar 14 2006 11:51:02

	BLAST	Protein	Structure	PubMed	Taxonomy
	Genome	Nucleotide	3D-Domains	Books	Help

Query: gi|470685 RTX toxin

Matching gi: 1710800

COG2931 assigned by Cognitor (2 best hits)

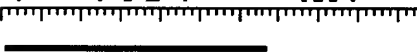
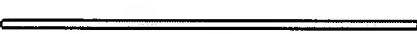



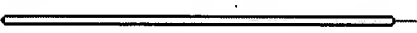
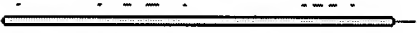
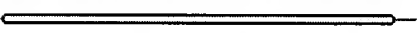








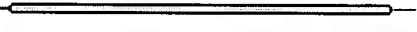





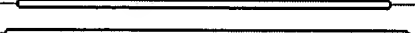
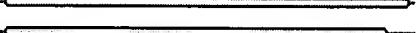
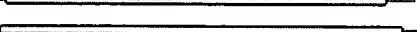



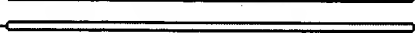
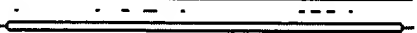

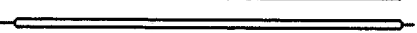

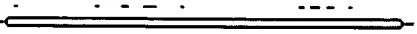
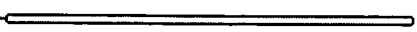


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1049 aa	SCORE	P	ACCESSION	GI	PROTEIN DESCRIPTION
	Conserved Domain Database hits				
	5074	9	P55131	1710801	RTX-III toxin determinant A f
	5052	9	AAK50053	13937109	RTX-toxin IIIA [Actinobacillu
	4502	7	Q9RCG8	73621356	Exotoxin paxA
	2644	5	CAD33759	24528030	hemolysin A [Escherichia coli
	2638	5	NP_755445	26249405	Hemolysin A [Escherichia coli
	2625	5	CAD42039	23954242	HlyA protein [Escherichia col
	2624	5	1208296B	225074	hemolysin hlyA
	2624	5	AAA23975	146379	chromosomal hemolysin A (hlyA
	2611	5	AAA98233	150682	hemolysin A [Escherichia coli
	2477	9	AAL55666	18026877	ApxIA [Actinobacillus pleurop
	2463	9	AAB17220	1477457	RTX-1 toxin determinant [Acti
	2462	9	ZP_001...	46143512	COG2931: RTX toxins and relat
	2442	9	P55128	1710793	RTX-I toxin determinant A fro
	2432	9	AAK50051	13937105	RTX toxin IA [Actinobacillus
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	2377	5	AAC24352	3253294	hemolysin [Escherichia coli]
	2375	5	YP_308794	73853298	Hemolysin A [Escherichia coli
	2369	5	BAA93708	7416116	hemolysin A [Escherichia coli
	2345	5	YP_325608	75994494	hemolysin toxin protein [Esch
	2340	5	CAA63849	1524027	EHEC-hemolysin [Escherichia c
	2327	5	CAA60042	1805762	EHEC-hlyA [Escherichia coli]
	2322	5	CAA56234	4388764	hemolysin [Escherichia coli]
	2213	8	CAA34731	38645	leukotoxin [Actinobacillus ac
	2168	8	AAA21922	141834	leukotoxin (Lta)
	2127	8	AAM45569	21305108	AqxA [Actinobacillus equuli]
	2123	8	AAM45566	21305104	AqxA [Actinobacillus cf. equu
	1981	5	AAA20544	525329	HlyA [Escherichia coli]
	1959	7	AAG40310	11762064	leukotoxin [Pasteurella treha
	1956	7	P55117	73620926	Leukotoxin (Lkt)
	1947	7	Q9ETX2	73621170	Leukotoxin (Lkt)
	1943	7	AAG40303	11762050	leukotoxin [Mannheimia glucos
	1941	7	AAR09165	38046598	leukotoxin structural protein
	1938	7	Q7BHI8	73621154	Leukotoxin (Lkt)
	1937	7	Q9EV34	73621169	Leukotoxin (Lkt)
	1937	7	AAG40300	11762044	leukotoxin [Mannheimia haemol
	1927	7	POC082	73621157	Leukotoxin (Lkt)

	1925	8	<u>AAX21415</u>	<u>60476777</u>	ApxIIA [Actinobacillus porc
	1920	7	<u>CAA81206</u>	<u>400425</u>	leukotoxin A [Mannheimia haem
	1919	9	<u>AAU84700</u>	<u>52630374</u>	ApxIIA [Actinobacillus pleuro
	1916	7	<u>AAA25543</u>	<u>150513</u>	leukotoxin membrane protein (
	1915	7	<u>AAG40306</u>	<u>11762056</u>	leukotoxin [Mannheimia glucos
	1914	8	<u>A43834</u>	<u>285302</u>	toxin II - Actinobacillus sui
	1912	7	<u>AAG40304</u>	<u>11762052</u>	leukotoxin [Mannheimia glucos
	1912	7	<u>P0C083</u>	<u>73621168</u>	Leukotoxin (Lkt)
	1911	7	<u>P0C085</u>	<u>73621161</u>	Leukotoxin (Lkt)
	1911	7	<u>Q9EV29</u>	<u>73621158</u>	Leukotoxin (Lkt)
	1906	7	<u>AAG40305</u>	<u>11762054</u>	leukotoxin [Mannheimia glucos
	1904	7	<u>Q9EV31</u>	<u>73621151</u>	Leukotoxin (Lkt)
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	1900	7	<u>Q9EV30</u>	<u>73621155</u>	Leukotoxin (Lkt)
	1898	9	<u>AAO74635</u>	<u>29470157</u>	ApxIIA [Actinobacillus pleuro
	1898	7	<u>P55123</u>	<u>1708221</u>	Leukotoxin (PlLkt)
	1898	9	<u>ZP_001...</u>	<u>32035699</u>	COG2931: RTX toxins and relat
	1897	9	<u>AAK50052</u>	<u>13937107</u>	RTX toxin IIA [Actinobacillus
	1896	8	<u>Q00951</u>	<u>232261</u>	Hemolysin (Cytolysin II) (CLY
	1893	7	<u>AAB36691</u>	<u>397995</u>	Lkta
	1891	7	<u>P55118</u>	<u>1708215</u>	Leukotoxin (Lkt)
	1830	5	<u>AAK84651</u>	<u>15146408</u>	RTX toxin [Moraxella bovis]
	1749	5	<u>ZP_007...</u>	<u>75234729</u>	COG2931: RTX toxins and relat
	1494	7	<u>AAR09161</u>	<u>38046593</u>	leukotoxin structural protein
	1479	7	<u>AAR09157</u>	<u>38046588</u>	leukotoxin structural protein
	1142	9	<u>CAB37652</u>	<u>4467352</u>	apxIIIBD [Actinobacillus pleu
	1134	5	<u>ZP_007...</u>	<u>75242313</u>	COG2931: RTX toxins and relat
	861	5	<u>AAR87855</u>	<u>40557139</u>	HlyA [Escherichia coli]
	648	7	<u>AAW21429</u>	<u>56681786</u>	leukotoxin A [Pasteurellaceae
	648	7	<u>AAW21432</u>	<u>56681792</u>	leukotoxin A [Pasteurellaceae
	648	7	<u>AAW21427</u>	<u>56681782</u>	leukotoxin A [Pasteurellaceae
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	615	7	<u>AAW21428</u>	<u>56681784</u>	leukotoxin A [Pasteurellaceae
	611	7	<u>AAW21434</u>	<u>56681796</u>	leukotoxin A [Pasteurellaceae
	607	7	<u>AAW21436</u>	<u>56681800</u>	leukotoxin A [Pasteurellaceae
	606	4	<u>Q57506</u>	<u>34978374</u>	Bifunctional hemolysin-adenyl
	606	4	<u>NP_886873</u>	<u>33599313</u>	bifunctional hemolysin-adenyl
	603	4	<u>AAZ57194</u>	<u>71979945</u>	adenylate cyclase toxin [Bord
	603	4	<u>CAA85481</u>	<u>11602643</u>	adenylate cyclase hemolysin [
	602	4	<u>CAB76450</u>	<u>7160624</u>	bifunctional hemolysin-adenyl
	602	4	<u>NP_882677</u>	<u>33595034</u>	bifunctional hemolysin-adenyl
	602	7	<u>AAW21439</u>	<u>56681806</u>	leukotoxin A [Pasteurellaceae
	601	4	<u>S51672</u>	<u>1073227</u>	adenylate cyclase hemolysin -
	600	4	<u>CAA68613</u>	<u>396666</u>	unnamed protein product [Bord
	515	7	<u>ABC16629</u>	<u>83356276</u>	leukotoxin structural protein
	508	7	<u>ABC16619</u>	<u>83356256</u>	leukotoxin structural protein
	507	7	<u>ABC16624</u>	<u>83356266</u>	leukotoxin structural protein
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	<u>357</u>	5	<u>ZP_012...</u>	<u>90411764</u>	type I secretion target repea
	<u>351</u>	4	<u>NP_274427</u>	<u>15677274</u>	iron-regulated protein FrpC [
	<u>342</u>	3	<u>ZP_005...</u>	<u>67938048</u>	Hemolysin-type calcium-bindin
	<u>342</u>	4	<u>P55127</u>	<u>1706913</u>	Iron-regulated protein frpC
	<u>341</u>	5	<u>YP_245455</u>	<u>66968578</u>	HlyJ haemolysin-like protein
	<u>341</u>	4	<u>AAD02003</u>	<u>4104348</u>	S-layer-RTX protein [Campylob
	<u>340</u>	4	<u>P55126</u>	<u>1706912</u>	Iron-regulated protein frpA
	<u>324</u>	4	<u>NP_518370</u>	<u>17544968</u>	PUTATIVE CALCIUM BINDING HEMO